

ODOT 854

“SmoothSeal”

**A new and improved
road resurfacing
technique for the City of
Englewood, Ohio**

**Presented by
Eric A. Smith,
City Manager
March 28, 2006**

Our Previous Method

Over 20 Years of Slurry Seal

Positive aspects:

- Good product \$1.10 to \$1.25 per square yard
- No curb loss
- Little curb or manhole consumption
- Wearing course
- Sets quickly – 4 hours
- Moderately pleasing appearance and public acceptance
- No grinding

Slurry Seal

Less than positive aspects:

- Emphasizes irregularities
- No structural strength
- Frequent re-dos – 5 to 6 years
 - cost
 - public inconvenience
- Usually requires extensive prep for alligatored areas and stress cracks

Our New Method

“SmoothSeal”

Introduced at a Fred F. Frecker, P.E., Executive Director, Flexible Pavements of Ohio Revival in 2001 in Cincinnati, but polymer-modified asphalt binders have been a big part of our City's life for a decade.

- The Roberts Recipe for crack sealing
- Arterial streets all fiber/polymer modified asphalt

Is “Smoothseal” the answer to Englewood’s 21st Century needs?

A qualified “yes” – here’s why: 854 offers

1. A “new” street with $\frac{3}{4}$ ” interweaving course and a superb appearance – a PR plus
2. Excellent riding qualities
3. Curb loss is minimal
4. Structural strength benefits
5. Corrects minor street deficiencies

854 offers (continued)

6. Little or no loose aggregate
7. Skid resistance is very good
 - perhaps surprising – several citizen questions
8. Much less preparation necessary – dollars saved
9. Potentially longer lasting by a factor of 2, 3 or ?
 - less resurfacing frequency
 - less maintenance
 - less inconvenience to the public
10. Englewood's five-year experience – performs as advertised

Two ways to modify standard PG 64-22 binder (to upgrade) to PGM 76-22 performance

- Inject 5.% SBR Latex solids (by weight) to post blend
- Use pre-blend SBS modifier (3-5%) to achieve a PGM 76-22 performance rating

Either of the above are acceptable methods of ODOT
854 binder modification

Englewood's 2002 "SmoothSeal" Program

- 83,200 square yards for 14 residential streets
- Engineer's estimate was \$228,800
(or)
- \$2.75 per square yard

Application:

- $\frac{3}{4}$ to 1" thick overlay
 - $\frac{1}{4}$ inch above the curb to promote drainage
 - Can be "feathered" at drive aprons
 - Slurry "overspray" stays in place
- Grind along curb face only

Three Bids were Received

-John R. Jurgensen -	\$276,938.50
-Barrett Paving -	\$246,011.50
-SE Johnson -	\$217,145.00

SE Johnson Bid Breakdown:

1. Transitional Profile *Milling & Cleaning	\$23,000
2. 3499 tons ODOT 854 Type A (\$55.00/ton)	192,445
3. 850 gallons ODOT 407 Tack Coat (\$2.00)	<u>1,700</u>
	\$217,145.00

*Millings were high quality and recycled into an asphalt roadway and walking path at a local park.

REMINDER:

-Engineer's estimate was \$228,800

(or)

-\$2.75 per square yard

Actual cost: \$217,145.00

(or)

\$2.61 per square yard

Does any job ever go
completely right?

A “lump in the gravy” tale of
Type A vs. Type B

First a basic comparison

- Type A - sand mix with 8.5% PGM binder
- Type B - crushed coarse aggregate with 6.4% binder

First third of resurfacing was Type A, SBS

- Problem with set up
- Paving required careful attention to detail
- Adjustment of mix made at the plant
- No one has an answer for Type A, SBS woes

Remainder of project switched to Type B, SBS

- Municipal Park parking lot experiment
- Larger aggregate seemed to process much better – no set-up issues – 1 hour
- Visual results much the same as Type A
- Job went very well with Type B, SBS
- Special thanks to Larry Norris, Operations Manager of SE Johnson, Cliff Ursich, P.E. of Flexible Pavements & Pat Welsh of Rub-R-Road

Conclusion

- Type B, SBS (or SBR) works best for us
- Very pleased with results – Englewood budgeted \$225,000 for 2003, \$275,000 for 2004 and \$303,000 for 2005. This year (2006) budget is \$280,000.
- Only unknown – longevity
 - Life expectancy up to 25 plus years reported elsewhere
- Some manhole risers required







-Immediately following the summer application



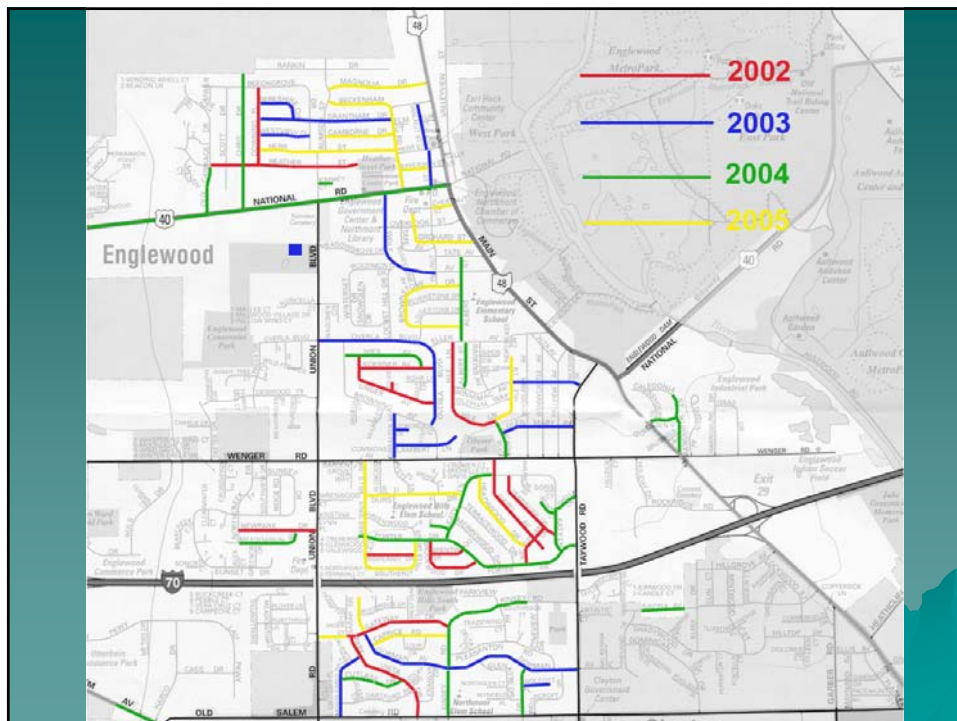
-A comparison of roads with and without the application

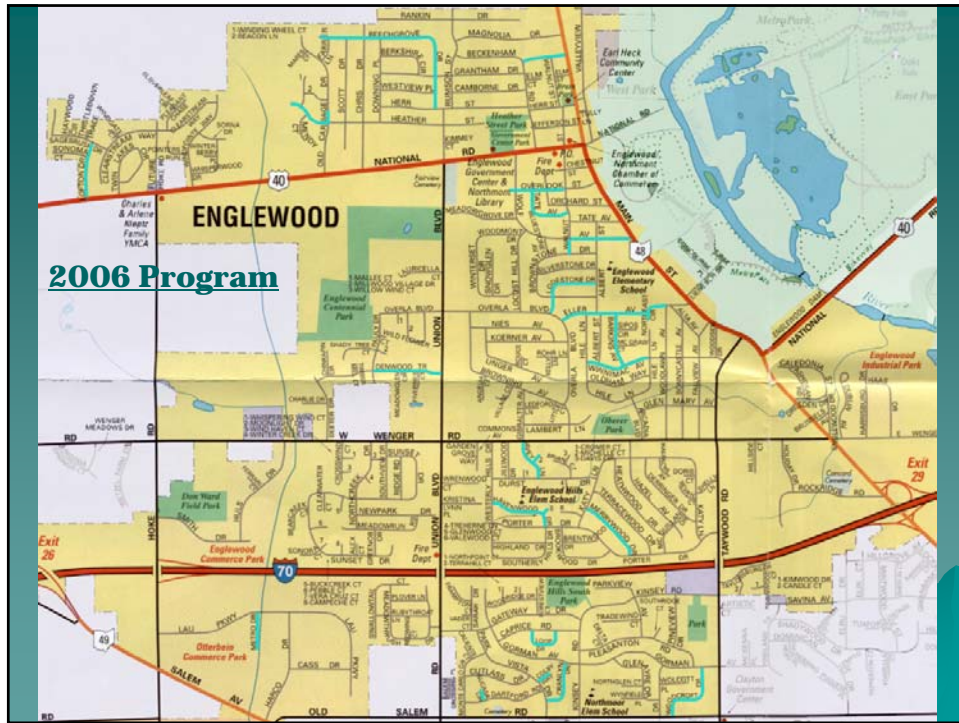


Existing slurry sealed asphalt pavement. This will be SmoothSealed this year.



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BID PROPOSAL
2003 City of Englewood
"Smoothseal" Polymer Hot Mix Overlay Program

ITEM	QUANTITY	UNIT COST	TOTAL COST
1. Transitional Profile Milling & Cleaning	Lump Sum	30,645.00	30,645.00
2. ODOT 854 Type B City of Englewood Smoothseal Resurfacing Specifications	3,425 Tons (4,230.11 sq yd)	52.00	178,100.00
3. ODOT 407 Tack Coat	850 gal. Actual 3,347.0	0.57	484.50
	Subtotal		209,229.50
4. "Credit" to Englewood if contractor is permitted to retain millings.		2,195.00	
5. "Cost" to Englewood if contractor is not provided local dump site		2,195.00	
6. Lowest price based upon most favorable circumstance to contractor		209,229.50	
7. Completion Date		SEPT. 15, 2003	
Name of Contractor	BARRETT PAVING MATERIALS INC.		
Address	2551 NEEDMORE ROAD - DAYTON, OHIO 45414		
Authorized Signature of Bidder	<i>Thomas E. McCarty</i>		
Contact Person	THOMAS E. MCCARTY		
Phone	(937) 279-3200	FAX	(937) 279-3205
Tax ID Number	13-3003901		



Five years later

March 27, 2006



Five years later

March 27, 2006

CONCLUSION

Englewood's five-year experience suggests "Smoothseal" deserves consideration as a preventative maintenance alternative for low volume streets.

RECOMMENDATIONS

- Only structurally sound streets should be candidates for thin layer hot mix asphalt
- Stick with "Type B" 854 Smoothseal to obtain greater strength and less application problems
- Apply only during warm weather preferably in excess of 65° F



Questions?